



A
BRIEF ACCOUNT
OF THE
VIRTUES AND MEDICINAL PROPERTIES
OF
SELTERS OR SELTZER WATER,
WITH
DIRECTIONS FOR ITS USE :

COMPILED FROM THE BEST AUTHORITIES,
ENGLISH AND FOREIGN.



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THE HISTORY OF THE

PROVINCE OF NEW HAMPSHIRE

FROM THE FIRST SETTLEMENT TO THE PRESENT TIME

BY SAMUEL JOHNSON

IN TWO VOLUMES

LONDON: Printed by J. JOHNSON, in Pall-mall.

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THE Fountain at *Neider Selters*, or Lower Selters, in Germany, has been known for ages ; according to the best authorities, it existed as public property in the *tenth century* ; it was filled up during the long war at the commencement of the sixteenth century, but was re-opened, and put in repair about the year 1561, when Dr J. Theodor, of Worms, gave a pompous description of it, in a work which he published in that year.

The fountain of Selters takes its rise from the village of Neiderselters, which formerly belonged to the Elec-

torate of Treves, but since 1803, to the House of Nassau. The village is situated in a pleasant valley watered by the little river Ems. It is distant from Limbourg three leagues, from Dietz four, from Francfort eleven, ten from Mayence, and eleven from Coblentz.

About a gun-shot from the village, and close to the high road, from Cologne to Francfort, is the fountain of Selters, surrounded by the necessary buildings for working it, and also by agreeable public walks. The water spouts forth from its source with considerable ebullition, forming an innumerable quantity of small bubbles, which burst on reaching the surface. The measurement which is made three times a year, in cleaning the fountain, gives the result that the fountain produces 20 measures of 2 lb. each, Cologne weight, per minute, (about 117,000 ohne of 170 litres each per annum, or about 8,805,447 English Imperial Gallons,) of a water limpid and clear as crystal, possessing a very agreeable, though rather tart and alkaline flavour; qualities which have for ages characterised it.

At every season of the year, whatever may be the state of the atmosphere, the temperature of the fountain never varies more than 2° Reaumur; the average temperature being 13° à 15° Reaumur, or 62° à 66° Fahrenheit.

According to the most recent analysis, which we owe to two eminent German chemists, Messrs Andreas

and Westrumb, 100 cubic inches,* or $60\frac{5}{12}$ ounces† of Seltzer Water, contain as follows, viz.:—

Muriate of Soda	-	-	$96\frac{2}{8}$ grains.
Carbonate of Soda	-	-	97
Sulphate of Soda	-	-	$4\frac{1}{8}$
Oxide of Iron,	-	-	$\frac{3}{4}$
Carbonate of Lime	-	-	$14\frac{1}{4}$
Carbonate of Magnesia	-	-	$8\frac{3}{4}$
Silex	-	-	$1\frac{1}{4}$

$225\frac{51}{100}$ grains.

Carbonic Acid Gas, 124 cubic inches.

Water taken at a distance from the source is entirely free from Iron, but that which is drawn from the fountain, contains the very small proportion of the Oxide of that metal, mentioned in the above analysis.

The discovery of Sulphate of Soda in Seltzer Water, which was made by Westrumb, in 1793, has more recently been the means of obtaining important information, as to the bad taste and disagreeable odour which this water, and others containing Sulphates, sometimes acquire when they have not been bottled or corked with due care; this flavour, vulgarly called a *rotten taste*, from a false impression that it arises from the corruption of the liquid, or of some of its constituent principles, result from a very different cause, and one

* About 2 quarts rial measure. † Colonge Weight.

long unexplained by Chemists and Physicians, but which, nevertheless, was not attributed by them to any decomposition of the water, because the Muriate of Soda, and the other Salts of which it is composed, have *long been known as powerful anti-septics*, as well as the Carbonic Acid Gas with which it abounds, and which also possesses that quality in a considerable degree, as has been proved more than sixty years since by Macbride.

Seltzer Water is therefore not putrescent in the common acceptation of the term, but, from the experiments of Westrumb and other distinguished chemists, it is in certain cases liable to an alteration, which imparts to it a disagreeable flavour and smell; straw, hay, or other vegetable substances accidentally deposited in the water, will in time decompose, from which decomposition several gaseous elements are produced, and amongst others, *hydrogen gas*,* one portion of which unites itself with the oxygen proceeding from the sulphuric acid of the Sulphate of Soda, which is decomposed; and the other portion to the residuum of sulphur; the latter combination gives birth to sulphurated hydrogen gas, (hydro-sulphuric acid) and it is this compound which, in uniting itself with the water, communicates thereto the smell and taste of rotten eggs. It also happens, under some circumstances, that a small quantity of sulphur unites with Iron to form a sulphate of this

* Vegetable substances are composed of oxygen, hydrogen, and carbon.

metal, which appears under the form of black flakes ; in this case, the sulphur is liable to decompose a portion of the water.

After all, Seltzer Water which has been deteriorated in the manner aforesaid does not thereby lose its medicinal virtues ; on the contrary, it acquires new ones, in becoming a more powerful purifier of the blood. It is true the flavour becomes disagreeable ; but this is of little consequence, except to those who make use of Seltzer Water only as a beverage.

Nevertheless, in order to prevent this accident as much as possible, the strictest precautions are taken at the establishment, in order that in removing the empty bottles neither hay nor straw can be introduced ; therefore the alteration seldom takes place in new bottles ; but it more often happens when old bottles are sent by consumers to be filled, and being in general carelessly packed, particles of hay or straw get in. It is not because they are not properly cleaned previous to being filled, but it frequently happens, after every precaution, that a small piece of straw, or other vegetable matter, remains in the interior ; on this account, the Establishment at Neider Selters, never makes use of any but new bottles, and the workmen have strict orders to return to persons providing their own bottles the identical ones sent by them. Notwithstanding the circumstance rarely occurs, we think it necessary to repeat, that the formation of sulphurated hydrogen gas in Seltzer Water does not render the use of it less salubrious.

Seltzer Water is shipped in stone bottles, each containing rather more than an Imperial Quart, and in others of half the size. These bottles are manufactured with great care, of a clay peculiar to certain parts of the Duchy of Nassau; on the shoulder of each bottle are the initials H. 'N. surmounted by a crown, and surrounded by the word **SELTERS**; the letters beneath indicate the name and residence of the maker. In order to insure the good quality of the bottles intended for Seltzer Water, they are filled with common water, and placed in a vertical position for twenty-four hours on planks, and if, at the expiration of that time, they are found leaky, they are immediately broken on the spot.

The filling is performed with great care and attention. The bottles being previously rinsed with the mineral water, which flows into a basin set apart for that purpose, they are then plunged into the centre of the spring, and as soon as filled they are corked, and the neck dipped into melted pitch, then covered with a piece of white leather, which is tied on, and also dipped in pitch, and sealed with the Director's Seal, on which are engraved the initial letters, and the year when filled,

thus



Every year a new Seal is Engraved,

and the old one destroyed. It is not customary to keep any stock of bottles filled at the spring, as orders are executed with great facility at the shortest notice.

As an additional precaution against the substitution of old or spurious water, the Directors have recently caused to be placed under each piece of leather a small label of thin paper, bearing the lithographic engraving of a lion rampant, encompassed with the word SELTERS.

The shipments to this country are usually made in baskets, or cases, containing 60 quart bottles each; and to the East Indies in similar packages, containing each 40 to 50 bottles, carefully packed in straw.

The fact that Seltzer Water will keep a very long time, in any climate, is attested by an immense number of consumers. It is known and drank in all parts of Europe, in America and the West Indies, the Cape of Good Hope, and the East Indies. It has been known to pass and re-pass the Line several times without changing; and instances have been known of its keeping for *six years in good preservation*, when well corked and sealed.

From the experiments of Dr Brocklesby, we learn, that Seltzer Water casts forth air bubbles in a much larger proportion, and for a longer time, than any other water he had tried. Finding, from repeated experiments, that the salts and earth [contained in Seltzer Water, are too inconsiderable both in quantity and quality, to produce the medicinal effects attributed to it, he proceeded to investigate what might be ascribed to the great quantity of fixed air, which this water constantly discharges, in a heat not exceeding that of the human body; and the result was his conviction, that

the active virtues of this water depend more on the fixed air, which it contains in uncommon abundance, beyond all other mineral waters, rather than in any combination of its saline and earthy contents.

The operation of this water, according to Hoffman and others, is chiefly diuretic, for it has no aperient virtues; and Hoffman recommends it as one of the mildest and most innocent of all the mineral waters, and observes, that it may be taken by persons of the weakest constitution.

As a beverage at meals, especially in warm weather, it will be found extremely pleasant and useful. It corrects acidities, renders the blood and juices more fluid, promotes a brisk and free circulation, and therefore is good in obstructions of the glands, and against gross and viscid humours. It is of great use in the gravel and stone, and other disorders of the kidneys and bladder. It is also excellent in gouty and rheumatic complaints, especially when mixed with milk, or improved by the addition of Rhenish wine, and a little sugar. It is drank with success in scorbutic disorders. It relieves the heart-burn, and is an excellent stomachic. On account of its diuretic quality, it is serviceable in dropsical complaints; and, mixed with asses' milk, it is much recommended in consumptive cases, and in disorders of the lungs. With or without milk, it is in great esteem in nervous disorders, and also in hypochondriacal and hysteric complaints.

From half a pint to a pint, taken in the morning, will be found very efficacious in restoring the tone of the stomach, when out of order from any irregularity,

especially when taken mixed with milk. In medicinal cases, about a pint, or rather more, per day, for an ordinary person, continued for four or five days, will produce a very beneficial effect ; but in very serious disorders, it of course, will be advisable to exhibit it only under the direction of a medical man.

As an exposure to the air will entirely destroy the virtues of Seltzer Water, it is absolutely necessary, where part of a bottle only is used, that it should be kept very securely corked ; and in all cases, the bottles must be laid on their sides, in a cool cellar or apartment which is perfectly dry, as damp will injure the water, and impart a disagreeable flavour to it.

THE END.



